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A neural network approach to predict existing and in-fill oil well performance

Linyu Yang Zhong He Yen, J. Ching Wu

Dept. of Comput. Sci., Texas A&M Univ., College Station, TX;

*This paper appears in: Neural Networks, 2000. IJCNN 2000,****Proceedings of the IEEE-INNS-ENNS International Joint Conference on****07/24/2000 -07/27/2000, 2000*

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Abstract:

We put forward a neural network approach to predict existing and in-fill oil well performance. Multiple wells history production data were used to train the neural network, and the established neural network can be used to predict future performance of oil wells. No reservoir data is currently involved in the establishment of neural network, therefore it can predict well production performance in absence of reservoir data. Since both the static and dynamic data are used in the training, we combine the spatial and time series prediction together in this approach. Primary production of a 9-well area in North Robertson Unit located in west Texas was tested in this paper. The results demonstrate that our approach is powerful in rapid projection of existing wells future performance, as well as the performance prediction of in-fill drilling wells. By incorporating the appropriate optimization technique, it can be further extended for use in location optimization of in-fill drilling wells

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